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REVIEW OF A SERIES OF SPLENECTOMY CASES.*

JOHN S. HELMS, M.D., F.A.C.S.
Chief of Staff and Director Division of Surgery
The Bayside Hospital, Tampa, Fla.

Splenectomy, like Cæsarian section, is a spectacular operation and, also like Cæsarian section, is one of the easiest operations in surgery in uncomplicated cases. It occasionally happens, therefore, that splenectomy is done without proper indications and the statistics concerning the operation are sometimes misleading, particularly with reference to its operative mortality in that the number of cases is diluted by cases in which the spleen is practically normal and the operation done without proper indication. The indications which justify the procedure should be carefully studied before the operation is decided upon.

The indications for splenectomy cover a larger field than our personal experience has met with. Generally speaking, splenectomy is indicated in a large group of cases of pernicious anæmia, splenic anæmia, hæmolytic jaundice, myelogenous leukemia following radium or X-ray treatment, Von Jaksch's disease, thrombo-cytolytic purpura-Kaznelson, malignancy of the spleen, traumatic spleen, wandering spleen, splenomegaly in syphilis and in some cases of splenomegaly in malaria.

Our experience has been limited to three types of cases: Pernicious anæmia, splenic anæmia, and malignant disease of the spleen. In our clinic eight splenectomies have been done in the last five years by the same surgeon. Two have been done for pernicious anæmia, five for splenic anæmia, and one for malignant disease. The operative mortality was twenty-five per cent, which was too high, but was due to bad selection of cases. The two deaths occurred in cases of splenic anæmia; one of the cases was very advanced with atrophic cirrhosis of the liver with frequent and copious hæmatemesis, the other was an exceedingly large spleen almost completely filling the entire left abdomen, difficult to remove. Operation was followed by marked hyperpyrexia within first twenty-four hours and death ensued.

Splenectomy for diseased conditions should not carry an operative mortality higher than five to ten per cent, according to the types of cases. The operation for splenic anæmia should carry the highest mortality due to the large size of the spleen, adhesions, etc. Splenectomy done for pernicious anæmia and hæmolytic jaundice should carry the lowest mortality and should be almost nil.

"Pernicious anæmia is characterized by progressive degeneration of the red blood cells, permanent change in the method of blood production, marked changes in the spinal cord, achlorhydria, and glossitis!"[1] The diagnosis in the early stages is difficult and uncertain. Its etiology is unknown. It will be interesting to note the results of future studies of focal infections and the absorption of toxic material from the large intestine as etiological factors in this disease. Splenectomy up to the present time seems to offer the only means of prolongation of life or temporary amelioration of the symptoms of this disease. The operation, if undertaken, should be done as soon as a diagnosis can be established. Cases in which hæmolysis is most active seem to be the most favorable for improvement. Cure is not to be hoped for; indeed, definite permanent cure would be difficult to prove in view of the uncertainties of early diagnosis. In two splenectomies reported in this series done for pernicious anæmia both were rather advanced; one lived six months following the operation while the other is still alive and at work as a minister after two and one-half years. It may be noted that numerous blood-transfusions were done in conjunction with the splenectomies. There were no operative deaths in these cases. The spleen was approximately double the size of the normal and there were no adhesions, and operative technique was easy.

In this series five splenectomies were done for splenic anæmia. All the cases of splenic anæmia

*Read before the Fifty-first Annual Meeting of the Florida Medical Association at Orlando, May 13-14, 1924.

that presented themselves were splenectomized, consequently the cases were not well selected and there were two operative deaths as above stated. Splenectomy may be said to be an almost certain cure in cases of splenic anæmia provided the operation is done before marked cirrhosis of liver has occurred and care is taken to avoid the cases which are likely to prove to be operative mortalities. The spleen is usually large and very adherent, both of which increase the technical difficulties of the operation and the operative mortality. Cases with marked portal cirrhosis with hæmatemesis should not be selected, if the surgeon desires to keep his operative mortality low. These large adherent spleens always show pathologically marked fibrous changes with thrombophlebitis and destruction of splenic pulp.

Chaney, quoted by Balfour,[2] says: "The spleen seems to act as a large lymph node by removing toxic materials and even bacteria from the blood stream. In the conflict between this harmful material and the spleen, a certain amount of spleen pulp is destroyed and is replaced by fibrous tissue. In a disease, such as splenic anæmia, the spleen seems to be called upon to destroy more of the toxic material than is possible, for in these cases there is a very early hepatitis which would seem to indicate that some of the infection had spread to the liver. This process is a slow one, for the disease continues for many years. Finally, so much of the useful splenic pulp is destroyed that the spleen can no longer dispose of the bulk of the infection. The spleen may then be said to be in a state of decompensation, then it becomes a menace by serving as a focus from which the liver may more easily be attacked.

"In splenic anæmia, if the spleen serves a useful purpose up to a certain stage of the disease, there must be an optimal time for splenectomy. A liver functional test may sometime be discovered which, in furnishing information concerning the liver, may serve indirectly as an index to the function of the spleen. A study of the postoperative mortality of these patients indicates that splenectomy for splenic anæmia should not be delayed until well-marked hepatic cirrhosis has occurred."

The following case of splenic anæmia may be of enough interest to report briefly. This case was that of a little Italian child twenty months of age, which had been sick for more than one year, sickness chiefly characterized by gradual weakness and anæmia with enlargement of spleen. Splenectomy was done. The spleen itself weighed two hundred and eighty-eight grammes, while there was an accessory spleen which weighed fifty-four grammes. The child made an uneventful recovery from the operation and rapidly improved to normal health. Six months after the operation the child contracted influenza and died. There was no apparent liver involvement in this case.

One case of this series was one of malignant disease of the spleen which lends interest because of its rarity as well as the difficulties of diagnosis. For these reasons I feel justified in reporting the case in more detail.

Mr. G. W. O., aged 53 years, admitted to hospital September 10, 1923, for study. Patient's chief complaint was pain in left hypochondriac region, loss of weight and general weakness. History and physical examination by Dr. E. W. Bitzer showed as follows: Family history was negative for tuberculosis, cancer or nervous diseases. Had had pneumonia in 1919, typhoid fever in 1910, pleurisy in 1911 and malaria one year ago. Had never had a surgical operation. Pain in left hypochondriac region radiating slightly to back since May, 1923, was relieved by medicine in August. Two days previous to admission was taken with severe cramps in left hypochondrium, followed by soreness, frequent nausea but no vomiting—spits up food slightly sour, no heartburn or sour stomach, constipated habit for four or five years. Has lost fifteen pounds in three months, palpitation at times, cannot take long breath on account of pain, cannot lie in any position except dorsal on account of pain. Physical examination showed a man six feet one inch in height, weight usual 175 pounds, present weight 160 pounds, general appearance fairly normal, poor color in lips. Teeth, three dead, no pyorrhœa, pupil of right eye fixed, irregular and dilated for twenty-five years due to iritis following ulcer. Left pupil active to light. Chest dull at left base one inch. Respiratory excursion very limited. Voice distant and a few rales present on deep inspiration, no friction rub. Heart negative except suspicion of systolic at apex. Right abdomen was very rigid, especially in upper portion, almost impossible to palpate. Skin is very hypersensitive over left upper quadrant extending up over chest above nipple in front and in axilla, very little tenderness in back. Systolic blood pressure 122, diastolic 75, temperature 100 degrees Fahrenheit at

8 and 102 degrees Fahrenheit at 4 p. m., pulse ranging from 80 to 160, respiration around 20 to 26, 12,000 leukocytes, 83 per cent poly. Tentative diagnosis of pleurisy of left lower chest (dry) with a question of an infection in left upper abdomen.

Cystoscopic examination by Dr. J. C. Vinson showed negative for the urological tract, both kidneys normally functioning; Wassermann negative.

Seven days after admission abdominal regidity began to rapidly disappear and a large mass could be felt in left hypochondrium which moved on inspiration and was tender. Chest condition improved and finally cleared up. Mass became less apparent and less tender. Cystoscopic examination proving negative, it was decided that mass was an enlarged adherent spleen. Splenectomy was done October 4, 1923. Spleen was found to be quite large, very friable and completely enveloped in adhesions. Hæmorrhage was moderate and well controlled. Stomach, duodenum and gall-bladder found negative, but a rather large sized metastatic growth was found in the right lobe of the liver completely penetrating the liver and showing on both surfaces. This was not disturbed. The pathological study by Dr. Herbert Mills showed a spleen weighing 1.087 grammes, multilobular in shape, the lobules varying from pea size to the size of an orange, solid and somewhat soft in consistency. In section the splenic tissue was almost entirely replaced by solid tumors varying from pea size to orange size. On section the tumors are grayish pink in color, moderately soft in consistency and there are areas averaging five mm. in diameter, whitish in color and of softer consistency than the surrounding tissue. Microscopic examination: section characterized by a compact mass of small round cells most of which are somewhat polyhedral in shape. These cells are closely supported by a network of connective tissue. There are many small blood vessels throughout the section. Diagnosis, endothelial sarcoma.

The patient made a good recovery from the operation and was apparently in good health up to about six or eight weeks ago, when metastasis in liver began to grow and patient is at present in poor condition.

The suggestion of Ochsner of a midline incision has been followed in these cases. The technique of Balfour has been followed out for the most part. Special care has been taken not to injure the stomach, splenic flexure of the colon or the tail of the pancreas. Blood transfusions have been used in all of the pernicious anæmia cases and in two of the splenic anæmia cases with apparent good results. Auto transfusion by use of the blood lost during the operation, as has been suggested by Bryan and others, has not been tried.

CONCLUSIONS

1. Splenectomy offers a chance for prolongation of life and an amelioration of symptoms in early cases of pernicious anæmia.

2. Splenectomy is almost a certain cure in splenic anæmia if done at an optimal time.

3. Splenectomy should not be undertaken in advanced cases of splenic anæmia with hepatic cirrhosis and frequent hæmatemesis.

4. Splenectomy in malignant diseases of the spleen is indicated provided there are no metastases discoverable by other means except an exploratory operation.

5. The midline incision of Ochsner should always be used to afford an opportunity for careful examination of stomach, gall-bladder and liver.

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[1]W. J. Mayo: Collected Papers Mayo Clinic, vol. 13, page 617.

[2]Collected Papers Mayo Clinic, vol. 14, page 62. Quotation from Chaney by Balfour.

DISCUSSION.

Dr. J. E. Boyd, Jacksonville:

I am sorry that my experience in splenectomy cases is rather limited. I am going to merely add to Dr. Helms' cases by citing a case of splenic anæmia, or, as I diagnosed it, "Banti's disease."

Those authorities who make a distinction between Von Jaksch's anæmia and Banti's disease feel that Banti's disease is rather rare in children, and it is for that reason that this particular case presents to me certain interesting features.

This case that I mention is one of a child, who was brought to me first in 1920. At that time she was carefully studied, and a diagnosis of Banti's disease was made. The parents refused operation and she was returned to her home in Georgia. At that time the child had complained of general weakness, vomiting of blood and distention in the abdomen. That was in June, 1920. In November, 1920, she began with a series of hemorrhages, and was returned to me in January of 1921. At this time she was accepted for operation. She received two blood transfusions,

but these did not do much for her blood. She was then operated upon and again transfused with blood. There were no difficulties. I am like Dr. Helms, that unless there are a lot of adhesions the operation is a rather simple one.

The thing that most interested me about this case was that the blood picture did not pick up as I felt it possibly should do. The child was transfused at the time she was operated, and one or two days afterward her blood study by Dr. McIver showed only a small increase in the reds, practically no effect on the whites, and only about possibly two or three per cent increase in the hemoglobin. The child went home.

Up to the time the child was operated on, she had been having hemorrhages at the rate of about four a year. In January, just one year practically from the above operation, she hemorrhaged again—a very large hemorrhage.

The child was brought back and we did two or three transfusions. At that time the reds were about the same as they had been before the operation, but the hemoglobin had gone up to 58 per cent, and the whites had made an increase. She was, as I have said, transfused, and the mother was told that she could take the child back home as there was nothing further to do about the matter at that time.

An aunt of the child, who did not think the child was being properly treated, then took possession of the case. She got some patent medicine of some sort and proceeded to care for the child. Six months after that she came to my office and pronounced the child entirely cured, by the medicine she, the aunt, had given her.

I had an opportunity to see this child again three or four days ago. The parents stated that there had been no further hemorrhages—that she had had no hemorrhages for about two years. She is now apparently in good health; however, we did not have the chance to study it out as we would like to have done as the parents would not permit her to remain here.

This is a probable cure, but we cannot state that it is a permanent cure. We can simply say that she is apparently in good health, going to school, and playing with other children. This is what we state, clinically, as a probable cure.

Dr. J. Knox Simpson, Jacksonville:

I have enjoyed Dr. Helms' paper very much, and I think this subject of splenectomy is a most important one.

I remember when I was in medical school there was a joke going around that one of the young men in a quiz was asked by the quiz-master to give the functions of the spleen. He hesitated for some time, and then said that he knew what they were, but had forgotten them. The quiz-master stated that it certainly was too bad that the only man who had ever known the functions of the spleen had forgotten them.

There has been a good deal of work done in recent years regarding the functions of the spleen, most of which was accomplished really through elimination, removal of the spleen, and study of the patient before and after the splenectomy. One subject that has been particularly interesting to me is that of splenectomy for purpura hemorrhagica, which was based on the theory that the spleen destroyed blood platelets at a more rapid rate than they could be manufactured, prolonging the bleeding time and lessening the clotting so that hemorrhages from the mucous membranes and under the skin occurred. Upon the theory that the spleen was the agent which destroyed the blood platelets, it has been removed in a good many cases, with prompt cessation of the disease.

Dr. John S. Helms, Tampa (concluding):

I have only a very few words to add. I want to express my appreciation for Dr. Simpson having referred to the recent work that has been done with reference to purpura hemorrhagica. I mentioned this in my paper, but I did not call it by that title; however, I used the term, "thrombo-cytolytic purpura."

There was a very interesting paper read before the Southern Surgical Association in December on this subject, which reported a case, and went over the scientific side of the cause of this disease, and pointed out splenectomy as the remedy for same.

I want to express my appreciation for Dr. Horsley having gone over the mechanics of the hemorrhages.

This is a very important subject as it describes the mechanical changes in cases where the hemorrhages are discontinued for a time after splenectomy and are later repeated.

HYDATIDIFORM MOLE AND REPORT OF CASE.*

G. H. Edwards, M.D.,
Attending Gynecologist at Orange General Hospital, Orlando, Florida.

Hydatidiform mole, also known as cystic degeneration of the chorion, vesicular mole and myxoma chorii, one of the complications of pregnancy, has been considered, until more recently, a very rare condition. Madam Boivin, in 1827, reported one case in 20,000 pregnancies; Edgar, in 1904, four in 15,000 cases; Possi, none in 6,000; Lynch, in 1921, one in 3,500; Hirsch, one in 4,000, and many others gave similar reports. In over 1,000 tabulated cases of pregnancy and with possibly 200 abortions and miscarriages unrecorded, I have seen but one case and that one but recently.

On the other hand, Arthur Meyer, carefully examining the expelled mass in 2,089 cases of abortion, found eight cases of chorionic degeneration, that is one in 261; and Velasco of Manilla, 1921, reports finding an average of one in 204 cases of pregnancy admitted to the Philippine General Hospital. But even so it is a somewhat rare condition.

I suppose the reason Meyer and Velasco found so many was because they were looking especially for it and noted many cases which were in the early or almost incipient stage, in which no invasion of the uterine wall had taken place, the cysts were very small and just enough disturbance of circulation had occurred to produce a complete abortion or miscarriage. I do not doubt careful examination with the use of the microscope might reveal many more.

Possibly this might be the cause of the many innocent abortions with which we have to deal and which terminate without incident, that is, those in which our patients tell us a mass was passed and thrown away, and we find on examination a soft patulous cervix but no signs of placental tissue.

The condition is characterized by the conversion of the extremities of the chorionic villi into transparent vesicules containing a clear slightly sticky fluid. These bodies vary in size from ones so small they can scarcely be seen up to ones large as medium-sized cherries and, being connected together by their pedicules, they give very much the appearance of a bunch of grapes. The formation usually involves the entire periphery of the membrane, but is said at times to be limited to small portions of the chorion, and this later may be one reason that so few have been recognized.

ETIOLOGY.

The exciting cause of this degeneration of the chorionic villi has not been definitely decided. Virchow states that it is due to endometritis; others give syphilis and uterine fibroids as a predisposing cause. Williams believes that the primary process originates in the ovum from the fact that in rare instances of twin pregnancy one ovum may be perfectly normal while the other presents a hydatidiform mole.

The diagnosis is rarely made before some characteristic grape-like vesicles have appeared in the vaginal discharge or until abortion or miscarriage has taken place. It must be suspected, however, when the uterus enlarges more rapidly than a normal pregnancy should. This, however, is also the case with hydrammios. The rapidly enlarging uterus, coupled with a recurrent hemorrhage rather thin in character, should arouse one's suspicions.

Despite its rarity hydatidiform mole should be of great interest to us and should be held in mind in all cases of innocent abortion and miscarriage. In 1917 Polloson and Violet reported 203 out of 433 cases of chorio-epithelioma, that is 45 per cent, as having been preceded by hydatidiform mole. In 1921 Palmer Findley reported 500 cases of which 31.4 per cent were preceded by hydatidiform mole.

In view of the work of Meyer, who found many early abortions to have chorionic degeneration, these percentages given are probably high when considering both early and late abortions and miscarriages. However, it seems that the early abortions empty out more completely than late ones, and it is those late cases where the villi have already invaded the wall of the uterus that are more prone to be followed by the malignant chorio-epithelioma, and it is this condition that we should be especially on the watch for.

When the diagnosis of hydatidiform mole is made, the uterus should be at once emptied of its contents. Care and time should be devoted to thorough dilitation of the cervix. Williams says: "Contents should be removed first by placental forceps or sponge sticks as far as possible and the rest removed by digital curettage."

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando May 13-14, 1924.

Theoretically that last suggestion is good, but in my case it was impossible to do it thoroughly that way, and I imagine it is so in most cases. If there is such danger of a malignant growth following the mole, the removal should be complete and thorough and that in many cases I believe can be accomplished only by the sharp curette. The operator, realizing the more than ordinary danger of perforation of the uterus and proceeding accordingly with caution, should have few if any accidents, and if perforation then occurred in the hands of a careful man it would indicate that the uterine wall was so tragically invaded that a malignant condition would almost positively ensue or was already present; therefore the uterus would be removed at once, as it should be, to save such a complication. Schumann objects to this, the usual method, and advocates the following procedure, which I quote:

"Upon the diagnosis of hydatidiform mole being established, no vaginal work is done whatever. Laparotomy is performed, the uterus isolated by gauze packs, and an abdominal hysterotomy is done, the mole being inspected in situ. Should it be distinctly limited in attachment to the decidua, and show none of the little hemorrhagic areas in the uterine muscularis, which bespeak invasion of the uterine wall, the tumor may be shelled out and the uterine wound closed after the cavum has been disinfected with iodine. Should areas of invasion of uterine muscle be present, however, and this is true in the majority of cases, no attempts are made at shelling out the tumor, but an immediate supravaginal hysterectomy is performed, the only exception to this plan being in the case of a primipara desirous of family to whom the situation has been carefully explained and who is willing to assume the risks of either curettage or abdominal hysterotomy with removal of the mole by this route."

Williams, however, refers to this method of treatment by Schumann and says: "I consider his recommendation unduly radical, and feel sure that it will lead to the unnecessary sacrifice of many uteri. At the same time I should not disapprove of routine hysterectomy whenever the condition develops in women at the end of the period of sexual activity."

REPORT OF CASE.

Mrs. McF., age 24, married sixteen months, came to me the latter part of December, 1923, with the statement that she had missed three menstrual periods and that it was now about time for her to be unwell again, if she followed her usual schedule. She gave a history of only slight discomfort at menstruation and of unusual regularity, that is always beginning on the morning of the 28th day. The last period in September had been perfectly normal. She had passed through a six weeks' period of mild morning nausea and at present was feeling fine. She left a specimen of urine which contained a slight trace of albumen, and was advised to come back at a more convenient time for an examination and measurements. Three weeks later she came back, the urine had still a slight trace of albumen, was acid, no casts and but few pus cells. The pelvic measurements were good. The uterus could be palpated above the symphisis. It was normally elastic, but cervix seemed to be unusually soft. The next day she phoned me that during the night she passed a small blood clot the size of a pecan. She had no discomfort at all. I advised rest for a day or so, thinking my manipulations of the cervix might have produced it. Some ten days or two weeks later she again reported that she had taken no rest as I had advised, but kept on at her usual occupation as stenographer with no sign of trouble until that morning when she again passed a small blood clot with no discomfort. I again advised rest, which was accepted, and because the urine was somewhat concentrated with the same trace of albumen and as patient was constipated, I ordered cream of tartar Bid. with happy results. A week later she phoned that during the night she began to have a thin bloody vaginal discharge and that her back was feeling uncomfortable. Three hours later when I saw her she was having uterine contractions every ten minutes with a slight bloody mucopurulent discharge. The fundus of uterus was one inch below navel and was very firm. With the uterine contractions the presenting membrane protruded well into the very soft cervix which admitted two fingers. Considering it an inevitable miscarriage, I gave her a hypodermic H. M. C. No. 1. Some four hours later I again visited the patient and was presented with a mass similar to a large bunch of green mountain grapes. No fœtus was observed. There was little hemorrhage, no fever and nothing protruding from the cervix. Six hours later she had a severe chill and passed considerable blood and her temperature mounted to 104. Curettement soon after conducted with

great care removed a teacup full of placental tissue and small cysts. This mass was rather firmly attached to the anterior and upper portion of the uterus. The temperature dropped, hemorrhage ceased and recovery was uneventful. Seen two weeks ago the patient had a normally placed and normal sized uterus and reported having had two normal menstrual periods. The urine contained no albumen.

In looking up typical symptomatology, I note that this case departs from type in several respects:

1. No profuse or protracted hemorrhage.

2. The uterus did not enlarge with undue rapidity, nor was it larger than it should have been for time of pregnancy.

3. The cervix was unusually soft instead of unusually firm, as stated by Edgar.

4. No unusual nausea, emaciation or discomfort was experienced.

5. No cysts observed passed anticipating the outcome.

6. I did not recognize the peculiar doughy feeling of the uterus which is said to be somewhat characteristic of the condition.

I surmise from these departures from type that this is a case of a benign hydatidiform mole, that is, one following which no chori-epithelioma will develop. However, the young lady is being observed bi-monthly.

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DISCUSSION.

Dr. F. J. Waas, Jacksonville:

These cases are rather odd and interesting. I have one which is in the hospital at the present time. But, first, I have some pictures that may be of interest while we are on the subject, and will pass them around.

The case that I have has been under my observation off and on for about five months. She had missed two menstrual periods without any evidence of hemorrhage. The third month she came to the office to see me on account of some bleeding. I made an examination but did not find anything interesting, and sent her home. But gave her some little sedative as we usually do in cases of that kind. At the end of another month she returned with some signs of more bleeding. Made another examination, and still there was nothing seen. I then suspected a placenta prævia. At the end of the fifth month, last week, her mother phoned me that she had a very profuse hemorrhage. I immediately went to see her and made another examination. There was no dilatation; in fact, nothing to suggest a placenta prævia.

I sent her to the hospital for observation. There were signs of bleeding off and on all during that day. The next morning about 5:30 a. m. she had a profuse hemorrhage, with very severe pain and expelled this malignant mole—expelled it before I could reach her. I recognized this condition, and then there was the question of what to do, and advisability of curettage. I made another examination and found the uterus was apparently empty, and about the size of a two and a half months' pregnant uterus. There was not much that we could do for her at that time, she was markedly exsanguinated, and I thought it better to wait until she had more thoroughly reacted.

There is just one other point that might be of interest in this case, and that is the marital history. I found out that they were third cousins, and I just wondered if that might not have some bearing on this mole.

On examination by the pathologist, this mole showed no chorio-epitheliomatous change. However, we are thinking of doing a hysterectomy or a hysterotomy some time this week; that is, if the findings still warrant it.

Dr. Maurice Heck, DeLand:

This is a very interesting case. I had one, a little over a year ago, in a child thirteen years old. The mother brought her to me, stating that she had had some bleeding. I told her that I could not tell her anything without making an examination, but the girl was too shy for that and they went away. Soon after that the brother came back and said that they had been to a chiropractor, who had given her treatments and the bleeding had stopped.

The next night about midnight they called me again, to come about twenty-five miles up the country. Of course, knowing the history of the case, I prepared for what might happen, thinking of the possibility of an incomplete abortion. She had looked pretty anemic when in the office. When I got there she looked mighty pale—was well-nigh exsanguinated, and I noticed that the bedding was pretty well saturated with blood.

On examination that great black mass presented. I recognized it at once, although it was the first one that I had ever seen; I had heard something of it in my earlier days. Without making any further examination I prepared my instruments, put her across a trunk, and got busy. I took a dull curette and cleaned out the uterus. Thinking of the possibility of infection in conditions of this kind, I did not make much of an examination afterward. If I had, I might have found something interesting.

I then explained to the family as well as possible that about 50 per cent of these cases were supposed to develop malignancy, and that if the chorio-epithelium should develop it would probably begin to show up in a few weeks. Told the mother that I would like to keep her under observation and for her to bring the child back to my office in about two weeks.

Four or five days later they called for me again. At this time the discharge had cleared up pretty well, was rather thin, blood-tinged and watery. No more of these grape-like masses had appeared. Had evidently cleared up pretty well.

About a week later I saw her again, and this time noticed a mass about the size of an orange, rather smooth, oval-shaped and lying to the right of the uterus, probably the ovary. On the left side there was a mass about half that size. In view of the circumstances, I advised that she go to the hospital at once and have an operation. But the mother said she would have to go home and consult father. I heard nothing more of the case, and began to get worried, so I sent word up there. One of the neighbors sent word back that the girl was all right.

Some time later I met her brother and learned from him that they had gone to another doctor right after their visit to me, and that he had told them it was all foolishness, that no operation was necessary.

Undoubtedly the masses found at the last examination were there before this condition existed, and were simply cystic ovaries or possibly a fibroid growth, and I might have found this out on an earlier examination. The brother, thirty-five years old, had taken treatment with 606 and had also been tubercular. If either of these conditions had any bearing on the etiology of the hydatidiform mole, the condition would be of interest.

Dr. G. H. Edwards, Orlando (concluding):

In closing I would like to say that the pictures submitted by Dr. Waas show a most excellent resemblance to what I had and had hoped to preserve.

I believe that if we would all examine very carefully the expelled masses in our so-called miscarriages and abortions, we might find that cases of hydatidiform mole are not so extremely rare as they are supposed to be.

THE POST-OPERATIVE TREATMENT OF PEPTIC ULCER.*

HARRY A. PEYTON, M.D.,
Jacksonville, Fla.

Rest, general or local, following most surgical operations is a fundamental principle which is well recognized. That this is especially to be desired following operations for peptic ulcer is self-evident. It is the author's purpose to outline a plan of treatment founded on certain gastric physiological facts, which have been found from practical experience to fulfill this requirement of rest. While applicable to any type of operation for peptic ulcer, it is of particular value following those procedures where, for various reasons, the ulcer must be left in situ.

Many of the treatments for peptic ulcer by non-operative methods are empirical, and fail to observe certain facts of gastric physiology, which have been established in recent years. As an example we may consider the subject of pain associated with ulcer. It was, and is still, commonly thought that high degrees of acidity are responsible for this. When we are confronted with the fact that free hydrochloric acid values in ulcer are often normal, or even below normal, this theory becomes untenable. Thus in 500 cases of gastric ulcer Smithies[1] found but 30 per cent above .25 per cent H. C. L.; in 45 per cent a normal range, and in 25 per cent the acidity was actually reduced. Quoting Smithies again, Pawlow, Rehfus, Carlson, Hertz, and Hamburger have shown that pain is not present when acidity is highest, and that the administration of hydrochloric acid fails to increase the pain; furthermore, that the pain is relieved equally well by means other than alkalies.

Regarding the mechanical factors in digestion, it has been demonstrated that:

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*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando May 13-14, 1924.

1. The empty stomach is tonically contracted.

2. Hunger is accompanied by rhythmic contractions of this organ.

3. Peristalsis persists as long as food is in the stomach.

4. Intra-gastric tension is regulated by the rate and intensity of peristaltic contractions and the proper functioning of the cardiac and pyloric sphincters.

It would seem reasonable to conclude from the foregoing established facts that the pain associated with ulcer is caused largely by the motility of the stomach, and not by any dysfunction relative to its chemical contents. Frick[2] observes that " it has been fairly conclusively proved that it is not caused by irritation of the exposed nerve endings in the ulcer by the acid gastric juice, but rather by the effect of the peristaltic contractions, intra-gastric tension, and pyloric spasm on the infected ulcer and the inflamed surrounding tissues."

Considering the effects of food on gastric digestion, Smithies concludes:

1. Water and salts cause limited gastric secretion and feeble peristalsis.

Carbohydrate foods leave the stomach quickly, due to their failure to unite with hydrochloric acid.

3. Retardation of carbohydrates in the stomach is marked if mixed with alkalies.

4. Protein food leaves the stomach more slowly than carbohydrates, and quotes Cannon as stating that at the end of one-half hour, eight times as much carbohydrates as protein has left the stomach.

5. Carbohydrates begin to leave the stomach immediately, while proteins remain one to three hours.

6. Fats remain longest in the stomach, but excite only feeble peristalsis.

7. Food delay in antrum and pylorus, the seat of 60 per cent of gastric ulcers, adds additional injury to the local lesion by reason of increased and prolonged activity of the stomach.

I think it fair to presume that it is possible to minimize the activity of the stomach and attain the end of comparative rest which is so much to be desired by the proper application of these principles of gastric physiology.

With the conviction that these principles are sound and logical, the following modification of Smithies' plan of treatment has been adopted in the Riverside Hospital for the post-operative management of peptic ulcer. The patient is given sufficient morphia to control the pain incident to the operation. Water and other liquids are not given by mouth for the first forty-eight hours. During this period, the patient is given paraffin to chew, as this materially lessens thirst and tends to cleanse the mouth. Beginning the day following the operation nutritive enemas containing alcohol (95 per cent), one-half ounce, glucose, one ounce, normal sodium chloride solution, eight ounces, are started. This is given by rectal drip, four times in the twenty-four hours. If there is rectal pain or discomfort, as a result of the enema, tincture of opium is added. By this means the patient is given 300 to 600 calories during the twenty-four hours. At the end of forty-eight hours, mouth feedings are begun, the nourishment being given liquid and warm at frequent intervals. For this purpose, thin cereal gruels and creamed soups are chosen and given in four-ounce quantities at two-hour intervals. At the end of two weeks, the diet is increased by adding easily digested foods; for example, baked potato, crackers, toast, cereals with cream and sugar, milk, which has been boiled or peptonized, ice cream, etc. A gradual return to full diet, with certain reservations, is allowed at the end of six weeks. No drugs are given other than the morphia. The bowels are regulated by means of enemas. The nutritive enemas are discontinued at the end of the first week.

Since the adoption of this regime, there have been treated, by this method, two patients with acute perforating ulcer of the duodenum on whom simple closure of the perforation was done, one patient with chronic duodenal ulcer, treated by posterior gastro-jejeunostomy, and one with pyloric ulcer on whom a resection of pylorus with a Polya type of operation was performed. We have been very favorably impressed with the freedom from pain, eructations, gastric distention and the smooth convalescence these patients have experienced. In no case has alkali been administered, and a careful follow-up record in each case has shown them to be comparatively free from discomfort since their return home.

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[1]Smithies, Frank—Observations upon the nature, diagnosis and clinical management of gastric ulcer with suggestions for a rational regimen of treatment. A. M. Jour. Med. Sci., 1923, 166-781.

[2]Frick, Anders—Medical Treatment of Peptic Ulcer Without Alkalies. J. A. M. A., 1924, 82-595.

DISCUSSION.

Dr. J. B. Wallace, Tampa:

My experience with the immediate post-operative treatment of peptic ulcer is so limited that I hardly feel myself capable of discussing that feature of it.

I think that most of us would be disposed to agree with the author in his principles as brought out in this paper.

The point that I should like to emphasize in connection with this paper as to the subsequent care and treatment of these cases after they get out of the hospital, is this: The importance of the maintenance of an adequate nutrition on the part of the patient, and in order to accomplish this we must have a suitable diet for that class of cases. It has impressed me for a good many years that in the care of these cases that this is a very important point.

Dr. Marvin-Smith, Orlando:

I wish to express my appreciation for the paper that Dr. Peyton has just read. It shows thought, study and experience.

There is one thing which may seem simple and of little value to most of you, but I do wish to emphasize it, and it is this:

In reference to carbohydrates, all of us know that starches pass through five processes of digestion. We also know that after cereal introduction the entire digestive tract is embarrassed. We know that starches are not well handled as a rule. Therefore, I do want to emphasize one single point in the giving of cereal gruels. Cereal gruels are all right, but I want to bring out this one little point. If you will have your cereals first toasted, then prepare your gruels, you will carry your carbohydrates through the first two stages of digestion. Therefore, by that means you will come nearer getting along without the discomfort of gas and gaseous distention and that sort of thing, than if you give the cereal gruels plain and untoasted.

As the Doctor has stated in his paper, rest is the thing that is most important in the care of these cases. If it is rest that we are going to accomplish, then let us accomplish it in every conceivable way, and using toasted cereals will very much aid the good results that you will get.

I do not quite understand the statement that Dr. Peyton made relative to salt—whether he made the statement that salt does not increase the peristalsis or whether it does, so I am going to say what I wish to say concerning that point. When salt reaches the stomach it immediately splits up, and the sodium and chlorine separate, producing hydrochloric acid. Any X-ray man in this room knows full well that hypermotility is increased by an increase in hydrochloric acid. Therefore I would warn any and every man against the promiscuous use of salt or salty gruels in the handling of post-operative conditions of the stomach. Rest, as the Doctor has said, is the thing greatly to be desired. It must be accomplished, therefore let us all be very cautious about giving salt. When we produce an increase in hydrochloric acid we are causing an increase in hypermotility, or the very thing we would overcome.

Dr. Harry A. Peyton, Jacksonville (concluding):

In regard to Dr. Wallace's statement that these patients should be watched over a sufficient length of time or a prolonged period of time, I think, we will all agree. It behooves us to watch these patients over a long period of time and to regulate them accordingly.

In regard to Dr. Marvin-Smith's mention of eructation: In this plan of treatment we have not had eructation or vomiting. I do not think for an instant that we have reached perfect success, but we have been very fortunate in not having eructation and vomiting. In such cases I should certainly not hesitate to resort to gastric lavage to overcome this disagreeable feature.

The statement made with regard to salt was this: That water and salt caused but feeble peristalsis, and if by taking salt as such into the stomach you increase hydrochloric acid in the stomach it is absolutely new physiology to me.

PRE-ECLAMPTIC TOXEMIA OF PREGNANCY COMPLICATED BY MONSTROSITY, WITH REPORT OF CASE.*

GEORGE FREDERICK OETJEN, M.D.,
Jacksonville, Fla.

It is always difficult, and sometimes impossible, by the ordinary clinical examination to differentiate between the nephritic and the pre-eclamptic varieties of toxemias of pregnancy. The pre-eclamptic toxemia is said to occur more frequently than the nephritic toxemia, and the prognosis is usually better in the former. Fortunately, the

*Read before a meeting of the Staff of St. Luke's Hospital, Jacksonville, May 8, 1924.

difficulty in diagnosis is more important from the scientific than from a practical point of view, as the treatment employed is identical for both cases.

In some instances the etiology may be the same for both varieties. Many theories have been mentioned as the causes of the toxemias of pregnancy. Of late, the general consensus of opinion is that the toxemias have their origin in chronic foci of infection, namely the teeth, tonsils, sinuses, etc.

Talbot states that emboli of bacteria are discharged into the maternal blood stream, time and again. From these foci in consequence of their low virulence have but a gradual effect upon the various organs through which they circulate. They feed by preference upon the carbohydrates, and in consequence are a drain upon the glycogen content of the liver. There is a rapid demand for carbohydrates for the growing fetus in pregnancy, and this forms an added source of depletion of the glycogen content of the liver, and leads to the symptoms which we see in the pre-eclamptic toxemia. Instances are on record where the extraction of an abscessed tooth has relieved such a condition.

The maternal blood charged with these bacterial emboli coming in contact with the placenta finds a most fertile field for further development, since this new and developing tissue. As the micro-organisms enter the placental circulation, Nature attempts to limit the process by a protective thrombosis, which results in the red infarcts so often seen in placentas. With their circulation cut off in consequence of the thrombosis these in time become the white infarcts, practically dead spaces in the placenta, and may be the cause of early abortion.

The emboli of bacteria, coursing through the other organs, cause destructive changes that require an added stimulation of the sympathetic nervous system to overcome them. They interfere with elimination, and a compensating increase in blood pressure is excited to overcome this deficiency. This is one of Nature's protective processes to increase elimination, as it has a reserve force for this purpose, and all goes well as long as the increase in blood pressure results in satisfactory elimination. With the retention of waste products and of water there is an increase in the bulk of the blood stream, which necessitates a dilatation of the whole vascular system.

Finally, when the increasing dilatation from within the blood vessels is greater than the contracting power of the muscular structure surrounding the arterioles, edema or passage of the excess fluid into the tissues results in the dependent parts of the body. With the increase in blood pressure, albumin shows in the urine, and indication actually that the toxemia has been existing for some time. As the condition continues, the strain upon the sympathetic nervous system finally becomes too great, the arterioles dilate, and edema of the tissues results. The action of the toxins of the bacteria upon the sympathetic nervous system causes intestinal paresis. The bacteria circulating in the liver feed by preference upon its glycogen contents, thereby creating a carbohydrate deficiency, and this gives practically the full complex of pre-eclamptic toxemia. With a system so surcharged with destructive changes, only a slight added stimulus such as a removal to a hospital, a vaginal examination, or beginning treatment is required to incite a convulsion. Eclampsia, accordingly, may be not the result of a single infection, but the final failure on the part of the system to combat repeated discharges of infective organisms circulating in the maternal blood stream.

REPORT OF A CASE.

D. P., age 25, white female, was referred by Dr. Graham E. Henson. Family history and past medical history irrelevant except for two sisters, one having had eclampsia twice, and the other once. Cystitis four years ago, and at times since.

Patient complained of persistent headache, nervousness and swelling of the feet and legs. She stated that for the past two weeks she had been very nervous, and that her sleep was often disturbed by dreams. A feeling of uneasiness would come over her and she would be in a state of tremor for hours, at times she had hallucinations. Patient noticed that she had considerable swelling of the feet and legs and tired very easily on slightest exertion. She was troubled with frequency and nocturia six to eight times. Her menses began at the age of 13. The flow was free, regular and not painful. Duration two days. For the past few years the flow has been free but somewhat irregular and painful. Duration three days. The last catamenia was June 11, 1923, lasted one day and was very painful. Patient has been married one year. Husband living and well. Patient considered herself about seven months pregnant.

Examination showed a fairly well developed and nourished white female, with considerable edema of the feet and legs. Blood pressure, 180 systolic—130 diastolic; pulse, 96; respiration, 20; temperature, 98 3-5. Patient complained of slight dimness of vision and partial deafness in both ears. Examination of eyes and ears was negative. Dentition good. Tonsils were hypertrophied and cryptic. The breasts were prominent and full. The respiratory excursion was somewhat limited, due to the high position of the uterus. The heart and lungs were negative. The abdomen was very prominent, and was about three inches higher than the costal margin. The abdominal walls were tense, and palpation of the fetus was very difficult, and the position could not be fully determined. Feeble fetal movements could be felt, but the fetal heart sounds and placental souffle could not be heard. No abnormal masses were palpated. There was some tenderness to palpation over the bladder. The vaginal examination was negative. The extremities were well developed, and the feet and legs showed considerable edema.

The laboratory report showed the following:
W. B. C., 9,400 per cu. mm.
R. B. C., 4,104,000 per cu. mm.
Hemoglobin, estimated, 80.
Differential count: Polys, 65.
Small lymphocytes, 28.
Large lymphocytes, 6.
Eosinophiles, 1.

The urine was yellow, cloudy. Sp. gr. 1,010. Acid. Albumin, strongly positive. Sugar, negative. Indican, positive. Acetone and diacetic acid, negative. A few hyaline casts and numerous pus cells were found. Quantitative test for albumin showed slightly over 1 gram of albumin per liter. The phenosulphonephthalein test showed 65 per cent elimination. Nitrogen ammonia and urea coefficients were not determined. After measuring the intake and output of all fluids for 24 hours, the output was found to be diminished.

Treatment: The blood pressure was recorded every three hours when the patient was awake. Patient was put on strict nephritic diet, except milk was allowed. Hut packs were given every eight hours for fifteen to twenty minutes. Mg. sulph. one ounce was given every morning for first three days, then P. R. No. 3 nephritin tablets were given every four hours in capsules. Five grains of veronal was given at night for insomnia when needed.

Patient began to show immediate improvement under this treatment. The blood pressure was reduced and the edema subsided. The quantitative albumin test showed a decrease in the amount of albumin per liter, and the patient's whole general condition seemed better. The urine output was greater, and the P. S. P. test showed 70 per cent. elimination. After a week's time the patient's condition was so much improved that she was permitted to go home in an ambulance. The nephritin tablets were continued.

About twelve hours after leaving the hospital, the membranes ruptured, and patient went into labor. She was sent back to the hospital immediately. An examination revealed a foot presenting, and no pulsations could be felt on palpation of the cord. Dr. Norris saw patient with me at this time. The foot was pulled down to act as a wedge and about two hours later a stillborn fetus (an amencephalus, with a bifid spine) was born spontaneously. The fetus was apparently one of about seven months' gestation. It weighed five pounds, measured nine and one-half inches in length, and across the shoulders measured five inches. All the bones of the vault of the skull were missing, and the brain was rudimentary and could be seen through its coverings. The spine was bifid in its entirety, and the cord could be seen in the groove between the bifid processes.

Two weeks before this patient was sent to the hospital she was apparently normal in every respect, except for a few pus cells in the urine. With the history of a chronic cystitis, it seems most likely that her toxemia was due to the focal infection somewhere in the urinary tract, and it is also possible that the monstrosity was due to the same focal infection. However, the fact that two sisters had had eclampsia would lead one to think of some hereditary condition. There was no history of any other monstrosities in the family on either side. Whether or not nephritin was of any value in this case I do not know, but ten days after the abortion the urine was entirely free of albumin and casts, and the urine has remained negative for albumin up to the present time.

TEMPORARY HYPERTROPHY OF THE PITUITARY GLAND AT PUBERTY WITH SYMPTOMS OF CEREBRAL PRESSURE.*

GILBERT OSINCUP, M. D.,
Orlando, Fla.

There being so much discussion at present as to the inter-relationship of the various glands of internal secretion, it seems to me that the case presented here has features which may help to clear the situation somewhat. According to Cushing, "Adolescence, pregnancy, and the climacteric doutbless represent periods of life in which occur the most striking and abrupt of all the physiological alterations to which mankind is heir. In some animals there are other more notably seasonal states, such as hibernation, which can be placed in the same category. These conditions are often coupled with more or less definite clinical manifestations on the part of the ductless gland series—changes which, for obvious reasons, have been recognized in the sexual glands and thyroid, but which have been largely unobserved in the case of the other glands, owing to their inaccessible position.

"This is particularly true of the hypophysis, for though experimentalists have shown that the interrelation between the interstitial cells of the ovary and the pituitary body is a most intimate one—far more intimate than with the thyroid, for example—the utter inaccessibility of the structure, which has precluded investigation by prescribed clinicial methods, as well as the unfamiliarity with the symptoms brought about by its states of over- or under-activity, has left the whole subject in obscurity.

"Puberty."—The possibility that, coincident with the adolescent period, there may be functional alterations in the hypophysis has not, so far as I am aware, been clinically suggested or histologically demonstrated. However, there are reasons for believing that at this age demonstrable changes occur which, in association with a primarily unstable gland, may so upset the biochemical processes of the body that they cross the boundary from a purely physiological state to one which borders on the pathological.

"The rapid increase in stature which occurs during the adolescent period in all likelihood due to an hypophyseal hyperplasia. The same factor may well account for the occasional spontaneous glycosurias characterizing this period of life; and it is not improbable that during this epoch the tolerance for carbohydrates is actually low in all individuals, as is possibly true also in pregnancy, in which state a transient physiological hyperpituitarism is more clearly demonstrable, as we shall see.

"It is conceivable, furthermore, that the acquirement of secondary sexual characteristics, which Tandler, Hanes and others have definitely shown to be related to the interstitial cells of Leydig in the testes, may in some way be dependent upon a primary hypophyseal stimulus—a conjecture which would seem to receive some support from the bizarre cases of early sexual development with certain types of hypophyseal or pineal tumor. The reverse condition—namely, failure to acquire secondary sexual characteristics, stunting of growth and a high rather than a low tolerance for sugars—due to hypophyseal insufficiency is easily produced by partial experimental extirpation in pre-adolescent animals."

In the case presented here it would seem that the symptoms are due to a stimulation of the hypophysis by the newly awakened ovarian secretion rather than a stimulation of the ovary by the secretion of the hypophysis.

Mary E. Lapham, in her article, "Preparations for Puberty," in the *Medical Woman's Journal*, 1923, says: "The posterior lobe of the pituitary influences the retention of water, development and functional force of the sex gland and the utilization of fats and carbohydrates. When there is insufficiency of the posterior pituitary the ovaries do not develop. Fat is deposited across the lower abdomen and the upper part of the thighs. The sex urge is lacking, the temperament is apathetic, and the tolerance for carbohydrates is greatly increased. This hypogenitalism with obesity may result in a difficult or impossible puberty. If the posterior pituitary, the one chiefly effected in its co-ordinating functions with the urogenital centers in the third ventricle, the hypogenitalism may be associated with an increased excretion of urine, resulting in enuresis, polyuria, and diabetes and insipidus. In other cases, insufficiency of the posterior pituitary causes relaxation of the nasopharyngeal circulation, establishing a tendency to colds and troubles in the sphenoid sinus."

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando, May 13-14, 1924.

Many cases of pituitary epilepsy are reported in the literature on this subject, but none of them as severe as that encountered in this case and none with the same periodicity.

CASE REPORT.

Female, age thirteen and one-half years. Family history negative, except all members are large in stature. Past history negative, except usual diseases of childhood, none of which were of unusual severity. Weight at birth, eight pounds. Menses began at twelve years and three months, and about this time the mother noticed unusually rapid growth and a tendency towards obesity. The child's mentality has always been sluggish, having advanced only as far as the fifth grade. Periods were regular, twenty-eight-day type.

In August, 1922, nine months after menses began, patient had first epileptiform attack. The day preceding this attack the patient complained of headache and seemed to be enormously hungry.

The next morning the child arose, apparently dazed and did not seem to know where she was; face flushed, unable to talk, except in monosyllables and after great effort. Had no convulsions, frothing at mouth or biting of tongue or lips. Patient was put to bed where she remained for about five days with her condition unchanged. No desire for food, involuntary defecation and urination. Recovery took place suddenly and child was apparently normal.

Similar attacks came on with increasing frequency until they were recurring about every two weeks.

I first saw the case during such an attack. Found a girl about 68½ inches tall; weight about 158 pounds; pulse slow, 64; temperature normal; respiration, 18; blood pressure, low, 106 systolic, 75 diastolic; marked girdle obesity; layer of fat over whole frame; sparse growth of pubic and axillary hair, and a dry skin.

Mental condition very sluggish; answered questions after a delay of six to ten seconds, during which time she was obviously making a marked effort to comprehend the question and to frame a reply. Unable to recognize members of the family. Totally apathetic. Made no complaint.

Reflexes: Marked lateral nystagmus, increased intraocular tension. Pupils reacted slowly to light. Patellar reflexes greatly exaggerated, six to eight contractions following one stimulus, dermographia marked. No sphincter control whatever. No opisthotonos or rigidity. Chest and abdomen negative; blood and urine negative.

This attack lasted about five days during which time all food had to be forced. Attack ended suddenly and patient was apparently normal.

X-ray taken day after recovery showed slight enlargement of the sella with a distinct shadow bulging out of it. Reported as showing marked hypertrophy of pituitary gland.

Patient was placed on thyroid extract. Normal menstrual period came on one week after this attack.

Four weeks after the one described, patient had a similar attack which lasted four days.

X-ray following this was reported as showing some diminution in size of the pituitary. One week later menses appeared. Four weeks later third attack came, lasting only three days. X-ray showed still smaller pituitary, but marked erosion of tip of sella.

This continued until finally the duration of the attacks was only one day or less, but with the same regularity. The attacks preceded the menstrual period by one week in each instance. During the intervals the mentality was markedly improved. The child taking an interest in her studies for the first time. The same medication was continued during the whole time. A gain in weight during a period of four months was about twelve pounds.

It would seem that one here had a case with a tendency towards dyspituitarism existing before puberty, but exaggerated by the beginning of the ovarian function to the point of distinct pathological hypertrophy.

The literature quoted at the beginning of this article was all that I was able to find which seemed to have a direct bearing on this case and both of these authorities seem to agree that the disordered pituitary function was the primary cause of the existing symptoms. In this case it would seem that the ovarian function was primarily at fault, in as much as no signs of pathology were evident until after the beginning of the ovarian function. It seems, therefore, as if the pituitary, already slightly disordered, was unable to cope with the added stimulus of the ovarian secretion and a pathological hypertrophy was the result. This in turn giving rise to the symptoms described, which are the result of, first, the pressure exerted by the enlarged gland and, second, the hypersecretion of the gland.

The thyroid extract was given in the hope of diminishing the ovarian function somewhat and so secondarily lessening the excessive stimulus being received by the pituitary. The results of this treatment were apparently satisfactory in view of the reduced length of the attack and the lessened severity.

DISCUSSION.

Dr. Stanley Erwin, Jacksonville:

This is a very interesting subject to the neurologist, but unfortunately most men consider this class of cases as a "medical curiosity." They say they are nice to read about, but that there is nothing we can do for them, then it is too late. Now, the time to treat these cases is when they begin,—when the child is just a little stupid, grows just a little bit too fast and is a bit fat,—or when the little girl does not sleep well, or when there is a little bed-wetting. It is at this stage that cases of endocrine disturbance ought to be investigated.

The oculist is also interested in these cases from the point of the eye.

Most of these cases are diagnosed when there is an endocrine upset with evidence of cerebral pressure or of brain tumor. At that stage it is easy, but then it is usually too late.

I am not going to say anything about the various glands affecting the body, with the exception of, perhaps, the thyroid. Now, whether the pituitary primarily at the beginning of puberty stimulates itself or is stimulated by the thyroid, is a question. This subject is very much mixed up at present.

The treatment by giving thyroid, and the result that it has evidently produced in this girl, is remarkable,—especially so when you consider the amount of pressure there was in the case as evidenced by erosion of the bone. There is danger in giving too much thyroid.

At the present time I have a patient who is going to be operated on next Saturday by Doctor Boyd. This girl has a minus pituitary, which has apparently been present all her life. During the last five years we have been giving her ovarian and thyroid extract. At the beginning of her treatment she had an infantile uterus and vagina, and scanty pubic hair, long legs, spatulate fingers, and she spoke slowly. After feeding her thyroid and ovarian extract for a period of two years she improved. A local examination at this time showed enlargement of the various organs.

Unfortunately, her parents became interested in Abrams' treatment, and took her to Georgia to be treated. During the time of these treatments in Georgia she continued taking thyroid and ovarian extracts. She was brought back to Jacksonville, and I examined her again two weeks ago. Apparently the local condition has cleared up. The cervix is of good size and the uterus seems to be all right. Periods are from five to six days. Her mentality is good, but she is very nervous. At the present time she has a tremor, very prominent eyes, and every evidence of a hyperthyroidism,— apparently an exophthalmic goiter. Basal metabolism showed plus 38, carefully checked.

Now, this case is to be operated, as I have said, next Saturday. However, we do not know just what the result will be,—whether it will bring her into normal girlhood, or whether she will revert to her original type.

Dr. R. R. Kime, Orlando:

When I first saw the title of the paper, "Pineal Gland", I thought we were going to hear something about the Seat of the Human Soul, as believed by the Ancients,—but it seems that Doctor Osincup is dealing with something else.

The pituitary body, although one of the smallest, is one of the most important structures in the whole human body. It is classed by Sajous as the heat center, also as the center of motion, respiration, nutrition and metabolism, controlling the adrenal system, including thyroid and parathyroid functions, thus correlating the immunizing functions of the body against disease.

We must then consider that within this structure we have two bodies, an anterior and a posterior, and that when we have a hypersecretion of the anterior lobe definite changes take place within the body, such as increased growth, giantism, acromegaly, etc. Then consider the hyposecretion with its opposite changes. We realize we are dealing with one of the most important constructive forces in the body, according to its size. We are just on the border line of developments that are going to be of great importance to all of us in the future. Take the relation, inter-relation and physiological functions of the ductless glands of the body with a knowledge of the synergistic and antagonistic action of each, then it is not beyond the range of possibilities that future generations may develop the stature of the human race at will. This subject is going to be of a great deal of importance to all of us in the

future in the treatment of disease and regulating physiological functions.

Dr. Gilbert Osincup, Orlando, (concluding):

This case slipped up on me unexpectedly. I am not an authority on the ductless glands of the body, and am not prepared to discuss that subject at this time. I simply reported this case because it seemed to be such a clear-cut case and one which might lend some new light on the subject.

DIET IN RELATION TO CONSISTENCY OF TOOTH STRUCTURE.*

JESSE WILLIAMS, D. D. S.,
Jacksonville, Fla.

In presenting a subject before a body such as this, being composed of a large percentage of medical men, there are several phases of dental practice which would be interesting to discuss, chief among which are the problems of focal infection due to dental defects and the problem of decay of the teeth and other disorders of the oral cavity, wherein deranged metabolism due to an improper diet deficient in some of the necessary minerals, the principal one in this case being calcium, plays an important part by rendering the teeth and adjacent bony tissues more susceptible to disease.

Ten years ago, any discussion of materials passing into the mouth in the form of food or otherwise would have been confined to the local effects such substances would have on the teeth in a local way—that is, their direct effects upon the enamel and other dental tissues. However, at this time the dental profession is focusing its attention to the effects of different foodstuffs on the consistency of the teeth and their supporting structures. For some years past such men as Dr. Percy Howe, of the Forsyth Dental Infirmary, of Boston, and Doctor McCollum, of Johns Hopkins University, have made some valuable experiments with animals in this connection. The Miller theory of decay of the teeth has been almost the universally accepted phenomena for many years past. To recite this briefly, Dr. Miller, of Berlin, explained and seemed to prove to the satisfaction of most everyone for a time that dental decay was produced by lactic acid fermentation dissolving out the cementing substance which holds the enamel rods together, thereby permitting the entrance of bacteria through the enamel which further produces and extends the decay. However, one ever-present problem which was confronting us every day was the fact that in some patients' mouths where they were using all known means of prophylaxis, they suffered from extended decay, and in other patients' mouths where they were not well acquainted with a tooth-brush, or any other means of dental prophylaxis, they seemed perhaps entirely immune to decay.

We are told if we take a handful of fertile earth into the laboratory and split it into its component parts, we find it composed chiefly of some sixteen elements. When we analyze the body of a man, we find that it, too, is made up principally of the same sixteen elements. The human body obtains them through the medium of food, and through food alone. We are also told that if we take a measure of milk, an egg, a handful of whole wheat or corn, oats or rye, again we find the same sixteen elements plus at least three marvelous compounds elaborated by the plant, though not in the soil. These compounds were not known in the modern laboratory until a few years ago. I refer here to the vitamines, "fat soluble A", "water soluble B", and the "anti-scorbutic or water soluble C."

We are told by Howe that to remove the "fat soluble A" it interferes with growth, reproduction and signs of ophthalmia are noticeable. Without the "water soluble B" signs of nervousness and lack of normal growth. Without the "anti-scorbutic or water soluble C" the consistency of bone and tooth structure will be seriously affected. The anti-scorbutic vitamine being the chief one concerning teeth, we are told this is located in raw foods and fruit juices and that man cannot live without it. In addition to leafy vegetables, he suggests milk and eggs. In connection with the above, he also recommends baked potatoes—skin and all—canned tomatoes, if fresh ones cannot be had. He calls attention to the control of a large per cent of salivary calculus which is often seen on the necks of teeth by the administration of "anti-scorbutic vitamine C." Doctor Howe mentions feeding filter paper C. P. as an indigestible residue in cases where enough other roughage cannot be obtained. He calls attention to the condition of the intestinal wall in cases fed on a deficiency of "anti-scorbutic or water soluble C," saying it is thick, congested and often presents small ulcers, while

*Read before a Staff Meeting of St. Luke's Hospital, Jacksonville, April 4, 1924.

when properly fed with ample roughage the gut wall, which is referred to as "the gateway of food into the body," is thin and healthy. A deficiency in "water soluble C" will produce loose pyorrhœal teeth and dental decay and bony support of teeth interfered with seriously. Other structural changes noticed are decalcified spots and molecular disintegration in tooth structure. In other words, his experiments indicate that in foods deficient in these necessary elements the teeth are changed and rendered susceptible to decay. These cases proceed to where tooth structure (the dentine) can be cut with a razor and if fed properly, the undecayed tooth structure will return to normal. He calls attention to these cases—all showing joint involvement, sometimes the bone itself becoming bare and the skin falling off—also eye involvement from spots on the eyes to cataracts; some of their offspring being born with one eye, no eyes—clubfoot, degenerated heart and kidneys and gastro-intestinal involvement. There are a good many eminent authorities whose statements stand on record as saying that "defective teeth are symptoms of malnutrition." The normally nourished possess sound teeth. The food had prior to and during the entire period of dentition seemed to be exceedingly vital. We have often heard it said, "No nation was ever so well-fed as America," but such flattery does not compensate for the infirmities so willfully ignored. Flattery is a poor substitute for the riches God has provided for his children.

The average farmer, as far as his soil is concerned, instinctively recognizes the meaning of pure food. He knows if he does not supply his vegetables and grains with the right kind of soil-food, he will reap a stunted and feeble crop. Wondrous are the operations of Mother Nature, but she will not stand willful abuse. Not a physician here would tolerate incompatibles in his prescriptions, but if we are to believe McCollum and McCann, in hundreds of homes in the United States today there is complacent toleration for food abuses that sap the stamina of the race. To quote McCann further: "Our Washington authorities, although they have occasionally spoken in plain terms, do not now refer to the menace of 'refined' cereals or 'improved' starches, of 'denatured' sweets and fats, of 'patent wheat flour,' of 'degenerated' corn products, of 'polished' rice, of 'demineralized' corn and potato starch, of 'robbed' rye flour, or 'refined' sugar, or any of the other manipulated foods sold in beautifully decorated packages that attack the vitality of prospective and nursing mother, child, soldier and civilian worker."

Cattle food and fertilizer are considered by the State and Federal Government of more importance than human food. The world disregards the most beautiful of Nature's laws in its consumption of degraded, debased, denatured foods, and then murmurs against fate, blaming it for the prevalence of disease upon the earth. We are told any combination of natural foods, unrefined, which we can think of, will place at our disposal the raw materials needed by Mother Nature in her function of protecting the body. We are taught new, red blood arrests disease, and that new, red blood depends on correct food. Of 10,500 school children examined, the British Dental Association found 86 per cent suffering from defective teeth and they pronounced it a result of diet lacking in the mineral substances upon which bones, teeth and tissues depend. Those who refuse to accept this fact are referred to the results of experiments of Doctor Geis, of Columbia University, in his analysis of the mineral content of defective teeth.

Of 42,750 children examined by Dr. William J. Galvin, Chief of the Division of Child Hygiene of the Boston Board of Health, 27,795 were described as defective. Of 1,694 children examined in six clinics, by Dr. A. Freedman Foote, eleven were found to possess normal teeth. In many instances he reports the molars were decayed to the gum line. The New York Department of Health, through Dr. T. Van Wincke, examined the teeth of 231,081 school children of New York City, outside the dental clinics, and found 131,747 children with defective teeth. We are told that these defective teeth are the direct result of the inability of the body to obtain, in their proper form and in their proper combination, the calcium, magnesium, phosphorous and flourine necessary to the construction of normal teeth, principally because these mineral substances have been removed from the food of the children. We are told that many foods on which children are fed have as much as 75 per cent of the lime natural to them removed by refining processes before they are put upon the table. We have always spoken of bread as the "Staff of Life" What, then, if the staff on which humanity leans so trustingly be broken by being demineralized?

The hundreds of "rejects" cast aside as physically unfit in the medical examinations of our

first draft of 1918, have opened the nation's eyes. The foregoing reasons are why the dental profession is beginning to recommend to patients the whole grains, finely ground, containing all the mineral salts and vitamines, instead of the refined, sifted and bolted cereals and breadstuffs; why we recommend every ripe fruit that grows; why vegetables and greens should receive tenfold the attention they now enjoy; why the waters in which vegetables are cooked should not be discarded, but served in the form of soups; why more milk should be consumed; why meat should always be accompanied by an abundance of vegetables; and why no child or adult should pass a single day without consuming fruit in some form; what eggs mean to the diet; why natural sugars, such as brown sugar, cane syrup, old-fashioned maple syrup and honey should be eaten instead of refined sugars and glucose syrups. In recommending these substances, we ask patients not to go contrary to diets previously outlined by their physicians, perhaps for some vital reason, but to consult with them always in cases where they are under medical treatment.

The serious consideration of diet is nothing new with you men of the medical profession. What I have hoped to present, however, is how correct nutrition will affect dental tissues in so far as we understand.

To summarize briefly, we feel that the function of the dental profession is not only to operate but also to educate. That with us, now as never before, the problem of a correct diet is paramount if prevention is really to mean what it should in caring for the teeth and adjacent structures. That ever since the birth of the dental profession in 1839, when the first dental school was established in Baltimore, very little progress has been made in preventing decay of the teeth, and that if this control ever comes to any appreciable extent it will be through the medium of control of the proper minerals in foodstuffs. That the masses of American people have drifted into habits of consuming denatured, demineralized foods, not realizing the harm that may result, and that the food manufacturers and manipulators while no doubt realizing these facts to some extent never will correct it until public sentiment demands it, and that through the education of patients by the physicians, dentists, dieticians and nurses as to correct food materials needed will be the chief ray of hope in overcoming errors in this all-important subject of diet.

If time permits, we will be pleased to make the attempt. One question already asked was: "Why are dentists continuing to insert certain types of dentistry which are questionable as to their asepsis and effects on a patient in a systemic way."

OUR RESPONSIBILITY IN GONORRHEAL EYE INFECTION.

CLAYTON WASHBURN, M. D.,
Jacksonville, Fla.

The subject here considered is not a new one, but, nevertheless, has been a momentous one for ages because the outcome when unfavorable is so disastrous to the subject, the community and the State, that we owe it to humanity and to ourselves to review and reconsider from time to time the treatment and handling of some of these old diseases.

It is with this in mind, and presenting some few new features in the handling of such, that this subject is presented to the staff of St. Luke's Hospital.

Hospital staffs oftentimes have an unfortunate habit of getting into a set, routine method of treatment, especially as to service cases, and when men of highest authority in our profession are working out and giving to us new ideas for both old and new conditions met in every-day practice, it is a duty that we owe to the patient and to the profession at large to take up without harm to the patient, and put to use, or discard after finding same of no service, some of these advanced ideas. In this way some really worth-while procedures can be made of much benefit to humanity.

This old and at the same time ever-present condition of gonorrheal infection of the eyes, is brought to our attention anew by the admission to the eye service of St. Luke's Hospital of a totally blind baby with an active infection still present. The child having been without care or treatment for two weeks, or since birth. The outcome is typical with this form of infection with this unpardonable neglect. The result is a sloughing and ruptured cornea with a dense, white leukoma, without hope of benefit from any source.

This particular case is the outcome of unfortunate circumstances,—the mother being feeble-minded and the father indifferent and unconcerned. But this disastrous result to a child's eyes happens now and again when there are no extenuating circumstances upon which the physician or attendant can shift the blame.

All of you have a vivid picture of those markedly edematous lids with pus literally pouring from the entire lid margins. You have in mind also as stated in the textbooks that a gonorrheal infection makes its appearance from a few hours to 48 hours after birth and this is a fairly accurate guide notwithstanding the typical appearing infections that take place at a later period, perhaps up to ten days or even two weeks. These infections coming on later are infections subsequent to birth, either from carelessness in caring for both mother and child or due to some other form of infection.

In the adult the source of infection is usually from an acute gonorrhœa by contact with soiled fingers or soiled linen and considering the frequency of gonorrheal infection, it is remarkable that the percentage of eye infection is as low as actually exists, but the percentage of those who get eye infection and escape without some permanent damage is also low. The child evidently inherits a certain amount of immunity from the infected mother, this having a tendency to abate the local symptoms in the offspring.

The diagnosis is ordinarily easy. In the adult there is usually the history of an infection. In the child the time and character of the onset are the leading features. As stated above, the most striking symptoms is the marked œdema of the lids with the copious flow of pus. This, of course, is preceded by redness, slight discharge, chemosis and congestion of the conjunctiva in rather rapid succession. A smear under the microscope may show the Neissarian organism at the first trial, but there is, especially at the beginning and during the later stages, a mixed infection including perhaps the pneumococcus, diplobacillus or inclusion blennorrhea infection making the diagnosis at times uncertain without making cultures and in these marked types it is not safe to delay treatment, but begin active treatment at once and change later if necessary. On the other hand, if there is any question as to the kind of infection it is much safer to await a positive diagnosis than to make any definite statement to family or friends as to the cause and then be forced to retreat from a stand that might have been somewhat embarrassing to the ones concerned.

The condition is always serious and the more virulent the infection the greater the danger, and the danger is in its action upon the cornea. This may be from a slight haziness to complete destruction.

In dealing with these infections, prevention should be first and foremost, and how best to accomplish this has been a question of controversy for many, many years. Most of the States have considered many methods; a few have passed laws, but most of the legislation has been in the way of recommendations.

In treatment, the Crede method of using 2 per cent nitrate of silver immediately after birth seems to have stood the test better than any other form of treatment, but it is still a question whether any compulsory form of treatment should be carried out promiscuously by all types of physicians and midwives. Such procedures may give a false sense of security or might possibly cause damage, by bungling treatment, to otherwise normal eyes.

There ought, at least, to be a law in all States making it compulsory upon both attendant and parent to report to the proper authorities within twenty-four hours all cases of discharging eyes during the first ten days. The State of Florida has such a law, but laws alone will not save eyes.

In the case of an adult coming under the care of a physician with the Neissarian infection, it ought always be a part of the treatment to warn the patient of the danger of eye infection.

In the case of known infection of the mother, the child, immediately after birth, ought to be taken in charge by a competent nurse, its face thoroughly washed with soap and water, the eyes copiously flushed with pure, warm water and 2 per cent nitrate of silver instilled in the eyes, yellow oxide ointment smeared on the lids and no other bathing of face and eyes for the next twenty-four hours for fear of secondary infection from the body surface; also it is not advisable to have the same nurse caring for the mother, care for the child's eyes after the emergency first treatment.

In both child and adult infection the chief aim is to keep the eye as free as possible from the rapidly accumulating pus. This is done with frequent flushings with any non-irritating solution, one of the best, however, is a weak solution of mercuric cyanide, the usual formula is composed of mercuric cyanide and sodium borate this in a 1/5000 solution makes an excellent medium for thinning the heavy secretion and is at the same time an active germicide.

The greater percentage of infants, with the certain amount of immunity which they have acquired in utero, will recover with a rigidly

carried out flushing treatment alone, but they will require careful watching, and with so much at stake it is hardly safe to depend on this alone. Gentleness in handling means much, for the slightest abrasion of the cornea will most certainly be followed by a sloughy ulcer. This in the majority of cases leading to perforation and destruction of the anterior segment of the eyeball with a matting together of the inflamed and displaced structure giving us the distorted white eye of adherent leukoma.

Within the past two or three years, much to the relief of all men in the medical profession, there has come to our hands a new procedure in treating these dreaded infections which gives us the feeling of something to which we may anchor. This is the remarkable results obtained with the protein injections in these cases. Some three years ago in discussing the viability of the Neissarian organisms with our present vice-president of this staff, he made the statement that discharges from gonorrheal infection would cease almost entirely if the patient developed a high temperature from whatever cause.

The external eye structures exposed to innumerable infections from air and otherwise, develop to a remarkable degree an immunity to infection as a matter of self-preservation, so to speak. Having this power of resistance, the reaction of the general system to eye infection is comparatively slow, and it occurred to the writer, who at this time had some of these severe infections to deal with, that if a high temperature could be brought about by artificial means the eye could be tided over the most destructive period in the rapidly developing infection. This was about the time the boiled milk injections were being used, especially by the French opthalmologists for various eye infections, and this treatment was instituted in these cases with surprising results.

In a series of cases of gonorrheal opthalmia reported since by Pillat, smears being examined every six hours, it was found that after two injections the gonococci generally disappeared entirely from the conjunctiva on the third or fourth day.

Lieberman states: "The method is empirical, as it is really not known how the milk acts, but that is no reason to refuse to acknowledge what prominent clinicians have testified."

Phagocytes and active bacteriocidal substances are evidently freely formed with the increased production of natural antibodies. This infiltration brings about a change in the pressure on the nerve filiments as well, for pain is relieved almost at once.

From the abundance of clinical evidence given to us by men of recognized standing it would appear that the treatment is not only justifiable, but required in the severe types of gonorrheal infection, and the time is not far distant when anyone refusing to use some kind of protein treatment and allowing eyes to go to destruction will be censured as one refusing to use antitoxin in a case of diphtheria.

It need not necesarily be cow's milk, but this has proved so successful and is so easily obtained that there seems no reason at present to resort to other so-called refined proteins.

The technic is simple and requires but few injections, two to six, two or three days between.

It is not intended that the protein treatment shall replace the regular, established treatment, such as ice compresses for the first few hours to inhibit the growth of the organism until the systemic reaction occurs, the thorough but gentle cleansing, the use of a mydriatic and the protection of the sound eye, for the injections will not prevent the infection of the fellow eye.

The treatment is intended to augment all the recognized forms of treatment of these infections.

ANOTHER AVENUE OF VIOLATION OF THE HARRISON ACT TO BE GUARDED AGAINST.

R. W. Blackmar, M.D., and
B. F. Woolsey, M.D.,
Jacksonville, Fla.

Probably there is no legislation of recent times of a purely public health nature from which the public should derive as much benefit as the Harrison Narcotic Act, and for the general public, the medical, dental, and drug professions to enjoy the fullest benefit from this law, a closer co-operation must be entered into to watch for possible violations and to assist in the enforcement of this measure.

With the foregoing in mind, we wish to call to your attention a practice of the many detail men who call on the physician, representing their various lines, and after either leaving us samples, or attempting to get orders for their respective houses, for supplies, instruments, or books, will frequently request us to give them a prescription blank, in order that they can show their employer an evidence of their visit.

Without the slightest reflection upon any of the detail men, whose visits are nearly always a pleasure, and profitable to us, we wish to condemn the practice of distributing prescription blanks in lieu of business cards, on account of the ease with which forgeries can be perpetrated. Many times the physician is asked for one of his cards by people who wish to have his name, address, and telephone numbers for future reference, and the physician gives them a blank prescription blank which may fall into some one's hands who may be an expert on writing narcotic prescriptions, and the forger may not be a professional man at all.

Recently, we were told by a friend, a detail man, who, after visiting the profession on a certain day, went to his hotel, and while making his daily report to his house, had on the table before him several cards and prescription blanks which he had gathered that day. The bell-boy in bringing him ice-water caught sight of the prescription blanks and immediately began negotiations for the purchase of the blanks. This detail man stated that this bell-boy admitted to him that he could get five dollars apiece for the desired blanks.

From the foregoing incident we may safely conclude that at least some prescription blanks are filled in for narcotics, forging the physician's signature and narcotic number, which is usually printed on his prescription blank.

With these facts before us for the first time, we believe it our duty to call to the attention of the profession who prescribe and dispense narcotics for the relief of suffering, to use great caution to prevent possible forgeries and thereby greatly aid in the intent of the Harrison Narcotic Act.

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CO-OPERATION

Work of any nature in which we mortals may engage, for its successful culmination, requires co-operation. With the last issue of THE JOURNAL increased interest was added to our reading pages by publication of the discussions of papers read at the Orlando meeting. These discussions were reported by a stenographer who had had no previous experience in work of this nature. Her work has brought forth favorable comment from many of our readers and from our essayists. THE JOURNAL now holds typewritten reports of all discussions of papers read at the Orlando meeting. Copies of these reports are being mailed to all members who entered into the discussion of a paper. It is very necessary if any corrections are desired that the report be promptly mailed back to THE JOURNAL. We, therefore, ask for the co-operation of our members in this little matter of detail.

PUBLISHER'S NOTE

DOES MERCURY KILL SPIROCHETES?

The experimental work recently conducted on animals by Nichols, Brown and Pierce, Hill and Young, Gruzhit, and others has clearly demonstrated that when an adequate dose of a mercurial salt is injected the spirochetes are killed—directly by the mercury.

Hill and Young, as well as Gruzhit, have shown that if a mercurial with low toxicity and high mercury content is selected the spirocheticidal results follow without any deleterious effects on the kidney epithelium, unless the dose, of course, is unnecessarily large.

Mercurosal (Parks, Davis & Company), we understand, is ideally adapted as a spirocheticide because of its synthetic, organic nature and because of its compliance with the requisites of low toxicity and high mercurial content. See the announcement of the manufacturers in the advertising section.